

Claims

[c1]

A four wheel drive assembly comprising a torque transfer assembly which receives torque and which has a first mode of operation in which said torque transfer assembly selectively transfers a certain amount of the torque to a certain axle upon a sensed slip condition and which further has a second preemptive mode of operation which occurs only after the first mode of operation has occurred.

[c2]

The four wheel drive assembly of Claim 1 wherein said preemptive mode terminates after a certain period of time has elapsed without the occurrence of a sensed slip condition.

[c3]

The four wheel drive assembly of Claim 2 wherein said certain period of time comprises about thirty seconds.

[c4]

The four wheel drive assembly of Claim 3 wherein said preemptive mode again occurs upon a sensed occurrence of a slip condition after said certain period of time.

[c5]

The four wheel drive assembly of Claim 1 wherein said preemptive mode terminates upon the attainment of a certain vehicular speed and the attainment of a certain value for a predetermined attribute.

[c6]

The four wheel drive assembly of Claim 5 wherein said certain vehicular speed comprises a speed of about twenty-five kilometers per hour.

[c7]

The four wheel drive assembly of Claim 6 wherein said predetermined attribute comprises a difference in the speed of a first axle and the speed of a second axle.

[c8]

The four wheel drive assembly of Claim 7 wherein said certain value comprises about two kilometers per hour.

[c9]

A four wheel drive assembly comprising a torque transfer assembly; and a controller which is coupled to said torque transfer assembly and which senses the presence of a surface having a low coefficient of friction and which has a

preemptive slip control mode of operation which is performed only after the presence of said surface is sensed.

- [c10] The four wheel drive assembly of Claim 9 wherein said controller senses the presence of said surface by sensing the occurrence of a slip condition.
- [c11] The four wheel drive assembly of Claim 10 wherein said pre-emptive slip control mode of operation ceases upon the occurrence of a third condition.
- [c12] The four wheel drive assembly of Claim 11 wherein said third condition comprises a certain vehicular speed in combination with a certain wheel speed value.
- [c13] The four wheel drive assembly of Claim 12 wherein said certain vehicular speed comprises about twenty-five kilometers per hour.
- [c14] The four wheel drive assembly of Claim 13 wherein said certain wheel speed value comprises the difference between the speed of at least one front wheel and the speed of at least one rear wheel.
- [c15] The four wheel drive assembly of Claim 14 wherein said difference comprises less than about two kilometers per hour.
- [c16] The four wheel drive assembly of Claim 15 wherein said pre-emptive mode terminates after a certain period of time.
- [c17] The four wheel drive assembly of Claim 16 wherein said certain period of time comprises about thirty seconds.
- [c18] A method for operating a vehicle including the steps of sensing slip; and entering a preemptive slip control mode of operation only after said slip has been sensed.
- [c19] The method of Claim 18 further comprising the step of terminating said pre-emptive slip control mode after a certain period of time.
- [c20] The method of Claim 18 further comprising the step of terminating said pre-emptive slip control mode after the vehicle has achieved a certain speed.